REMARKS

Claims 1-6 are pending in this application. In the parent case, the Examiner rejected the claims of this application under 35 U.S.C. §103(a) as being unpatentable over Guo et al. (U.S. Patent No. 6,377,972 in view of Rexford et al. (U.S. patent number 6,633,544). This preliminary amendment addresses these rejections.

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art, to modify the reference or combine teachings. Any proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. There must be a reasonable expectation of success and the prior art references must teach or suggest all of the claim limitations. See M.P.E.P. 2143. Conclusory statements cannot be relied on when dealing with particular combinations of prior art and specific claims. The rationale for combining references must be put forth. *In re Lee,* 61 U.S.P.Q.2d 1430, 1433. The Examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references".

The Examiner stated that Guo et al. does not teach maintaining the nodes in the graph, that Rexford et al. teaches using the well-known Dijkstra's algorithm to generate a shortest path graph of a steaming media network and optimizing the number of hops and that it would have been obvious to a person of ordinary skill in the art for Guo et al. to maintain the network in a graph because this would have allowed ease and speed in rout computations in the network. It is respectfully submitted that the Examiner did not put forth any reason for combining references. The Examiner's statements are conclusory statements that are prohibited by *In re Lee*. A person skilled in the art would have no reason to look at Guo et al. in view of Rexford et al. because Guo et al. does not teach or suggest optimizing the number of hops and would therefore not look elsewhere to determine how to a use helper machines (the stated purpose of Guo et al.) using the teachings or suggestions of Nguyen et al. Additionally, the Examiner has only stated what the Examiner believes the references teach and that it would be obvious to combine the references based on what Rexford et al. teaches. It is respectfully submitted that the Examiner's stated reason for combining the references is not related in any way to the problem being solved in Guo et al., and therefore, a person skilled in the art would not look to combine the Guo et al. and Rexford et al. references. The Applicants respectfully submit that a prima facie case of obviousness has not been made.

Furthermore, the Examiner stated that Guo et al. teaches: determining a set of connection constraints and refers to latency, bandwidth, minimum required QOS, jitter, distance between "helpers", the number of hops between helpers, the activity of helpers, the type of helpers, etc.; selecting at least one performance parameter to optimize at column 18 lines 37-49 of Guo et al.; connecting streaming nodes if the set of connection constraints is satisfied at column 18 line 50 to column 19 line 33 of Guo et al.; and optimizing the at least one performance parameter at column 18 lines 37-49 of Guo et al. The Applicants respectfully disagree.

Guo et al. teaches a method to support live and on-demand streaming multimedia using Helper machines. A Helper machine is a machine in a network that provides value-added services such as caching services and prefetching services. When a request for a continuous media object is received at a Helper, the Helper makes a decision as to the location from which the requested data will be obtained. The Helper then determines if a new data stream is to be established or to share an existing stream. Guo et al. teaches using a subset of indices to select a near optimal solution. The subset of indices that Guo et al. teaches to use is network load, buffer requirements, and service time. Guo et al. teaches at column 13, lines 43 to 67 that the parameters used to approximate the indices are hop count or number of outgoing streams for network load, buffer at a single Helper for buffer requirements, and request arrival rate and service rate for service time. Guo et al. also teaches that the performance indices often compete and conflict with each other. As a result, Guo et al. further teaches that any algorithm for Helper Selection must weigh the several important parameters to find an appropriate trade-off.

Guo et al. teaches at column 18, line 37 to column 19 line 17 the use of parameters w_b, w_n, and w_s as weighting factors to weigh buffer requirements, network load, and service time respectively to select a Helper having the minimum cost C_{new} for creating a new stream or selecting an existing stream to share that has the minimum cost C_{share}. Cnew and Cshare are defined by Guo et al. to be

$$C_{new} = \min\{w_B * B_S(H_i H_j) + w_N * N(H_i H_j) + w_S * S(H_i) | H_j \ \ is \ \ in \ \ session\} \text{ and}$$
$$C_{share} = \min\{w_B * B_S(H) + w_N * N_S(H) | S \ \ is \ \ multicase \ \ stream\}$$

where $B_S(Hi, H_j)$ is the additional buffer space required to set up a new stream normalized to available buffer space at a Helper, $N(H_i, H_j)$ is the network load factor that is a function of spatial distance and is set to a number between 1 and 4 based on the distance between Helpers, $S(H_i)$ is the average service time, $B_S(H)$ is the buffer space required to absorb the temporal distance between the data stream and the Helper H and to join the stream normalized to available buffer space at the Helper H, $N_S(H)$ is the network load factor that is a function of the distance to the closest Helper having the stream to be shared and is set to a number between 1 and 4. The

costs are compared with another weighting factor w and if $C_{new} < w*C_{share}$, that allows a preference between multicast (and sharing streams) or creating new data streams to be weighted more than the other (sharing streams or creating new stream).

The Examiner is directed to paragraph [0099] of the present application. A performance parameter is a system resource that is used to connect the source device to the destination device. For example, a performance parameter may be the number of gateways used to connect source and destination devices, the number of transform nodes, the latency between the source and the destination devices, the amount of bandwidth used, the amount of memory used, or the CPU usage.

It is respectfully submitted that minimum cost is a constraint and not a performance parameter. Using the lowest cost solution often results in performance parameters that are not optimized. Therefore, selecting a minimum cost does not optimize at least one performance parameter. Additionally, Guo et al. teaches determining the buffer size needed to support a new stream or to join an existing stream. Determining the buffer size needed to support a new stream or to join an existing stream does not optimize the buffer size used. The network load of Guo et al. is the incremental cost of setting up a new stream or joining an existing stream. Guo et al. teaches that without knowledge of network topology and Helper location, aggregate network load can only be estimated. As such, the network load of Guo et al. is an estimated cost based purely on multicast scoping. It is respectfully submitted that an estimate of an item cannot be used to optimize a performance parameter because there is no guarantee that the estimate is accurate without further knowledge of the underlying system. Similarly, the service time of Guo et al. is the delay associated with a Helper's queuing and processing of a request. It is not a performance parameter as service time is a portion of the streaming latency between the source device and the destination device (neither of which are Helpers).

Furthermore, the use of the weighting factors w_b, w_n, and w_s teaches that the minimum cost that is calculated is based on a trade-off between the three parameters of Guo et al. Even if the three parameters of Guo et al. were to be considered performance parameters, the use of weighting factors in the cost equations results in parameters that are not optimized because when the other parameters are added to the cost equation, the sum of the three parameters can result in parameters that are not optimum for the particular parameters.

Rexford et al. teaches a method and apparatus for computing, storing, and allocating efficient minimum cost routing connections between nodes in a network and provides an extension to Dijkstra's algorithm coupled with discretized link costs to generate a shortest-path graph with one or more routes to each destination. As stated previously, a minimum cost parameter does not teach or suggest optimizing a parameter.

In view of the foregoing, it is respectfully submitted that neither Guo et al. nor Rexford et al., singly or in combination, teach or suggest all of the elements of claim 1.

Claims 2-6 depend from claim 1 and are believed to be patentable for the same reasons set forth above for claim 1. With respect to claim 2, the Examiner stated that the proxy helper is a gateway and therefore Guo et al. teaches the elements of claim 2. The Applicants respectfully disagree. Claim 2 requires the steps of determining if a gateway to connect two busses (the first bus and the second bus) together exists and connecting the busses to the gateway if the gateway exists and if the set of connection constraints is satisfied. A gateway is a node on a network that serves as an entrance to another network. The proxy helper of Guo et al. is a helper to which all requests from a certain receiver will be redirected. A helper of Guo et al. is a machine in a network that provides certain value-added services. The helpers selectively cooperate and communicate continuous media objects between and among each other. The helpers are used inside a network as data forwarding, caching, and buffering agents. The helpers of Guo et al. do not serve as an entrance to another network. No teaching or suggestion could be found in Guo et al. or Rexford et al, singly or in combination, of determining if a gateway to connect two busses (the first bus and the second bus) together exists and connecting the busses to the gateway if the gateway exists and if a set of connection constraints is satisfied. Therefore, Guo et al. and Rexford et al. do not teach or suggest all of the elements of claim 2.

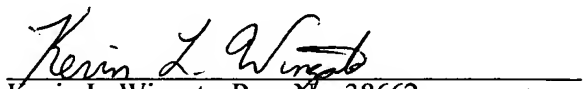
Claims 3-5 depend from claim 2 and are believed to be patentable for the same reasons set forth above for claim 2. With respect to claim 3, claim 3 requires a common bus and gateways for connecting each of the first and second busses to the common bus and connecting the first and second busses to the common bus using the gateways if the set of connection constraints is satisfied. No teaching or suggestion could be found in Guo et al. or Rexford et al, singly or in combination, of using gateways to connect two busses using a common bus between the two busses.

With respect to claim 4, claim 4 requires that if one of the busses of claim 3 is an IP bus, using the IP bus if the set of constraints is satisfied. Rexford et al. does teach using IP. However, no teaching or suggestion could be found in Guo et al. or Rexford et al., singly or in combination, of preferring the use of IP by using an IP bus if the set of connection constraints is satisfied as required by claim 4.

With respect to claim 5, the Examiner correctly stated that Guo et al. teaches latency. However, no teaching or suggestion could be found in Guo et al. or Rexford et al., singly or in combination, of selecting a common bus that corresponds to a latency that is closest to a target latency as required by claim 5.

In view of the foregoing, the application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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